



Robert D. Brown
Director, Vehicle Environmental Engineering
Sustainability, Environment & Safety Engineering

December 9, 2009

Clerk of the Board, Air Resources Board
1001 I Street
Sacramento, California 95814

Subject: Notice of Public Availability of Modified Text
Notice of Public Hearing to Consider Proposed Amendments to New Passenger Motor
Vehicle Greenhouse Gas Emission Standards

Ford Motor Company (Ford) appreciates the opportunity to comment on the California Air Resources Board's (CARB's) proposed modifications to section 1961.1 "Greenhouse Gas Exhaust Emission Standards and Test Procedures – 2009 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles", dated November 24, 2009. Ford supports CARB's intent to aggregate volumes from California and states adopting California standards into one fleet average as well as to allow the use of Federal CAFE data to demonstrate compliance with the Greenhouse Gas (GHG) standards.

As previously recommended in the Ford September 15, 2009 comments on the CARB proposed amendments, Ford offers the attached comments in support of the use of Federal CAFE data, with suggested regulatory language changes that would implement our comments. Ford welcomes the opportunity to discuss this information in detail with CARB staff. If you wish to discuss further, please contact Robert Holycross at (313) 845-8247 or Cynthia Williams at (313) 322-6643.

Sincerely,

Cynthia Williams For
ROBERT D. BROWN

Ford Motor Company Comments on 15-Day Notice;
Amendments to Motor Vehicle Greenhouse Gas Emissions Standards

Ford Motor Company (Ford) welcomes the opportunity to comment on the California Air Resources Board (CARB) approved modifications to the Greenhouse Gas Exhaust Emission Standards and Test Procedures – 2009 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles", dated November 24, 2009. Ford supports CARB's intent to aggregate volumes from California and states adopting California standards into one fleet average as well as to allow the use of Federal CAFE data to demonstrate compliance with the Greenhouse Gas (GHG) standards.

Ford's primary comment on the 15-day notice modifications has to do with the proposed use of the word "subconfiguration" at various points in the regulatory language. The proposed requirement to do calculations and report data at the "subconfiguration" level would create unnecessary and costly burdens. As discussed in more detail below, Ford suggests modifying the proposed regulations to replace the term "subconfiguration" with the term "model type," a change that would reduce the burden on manufacturers while still providing CARB with all of the data it needs for purposes of administering and enforcing its GHG regulations.

As CARB knows, NHTSA sets fuel economy standards for cars and light trucks sold in the U.S.; EPA calculates the average fuel economy for each manufacturer. Specifically, the U.S. EPA Compliance and Innovative Strategies Division verifies all CAFE data (subconfiguration, configuration, base level and model type) submitted by the manufacturers, independently calculates the fuel economy values to determine a manufacturer's final model year CAFE and issues a Final Average Fuel Economy Calculation Report. California currently accepts the certificate from EPA as proof that our emission data vehicles were appropriately tested. A similar practice should be adopted by California in the acceptance of CAFE model type calculations for purposes of the GHG regulations. Model type data:

- Represents the top level sub-calculation data input to CAFE calculation
- Captures car line, basic engine, and transmission class
- Captures all of the fuel economy detail of the lower level calculations (e.g., over 1,000 sub-configurations for a full-line manufacturer)
- Covers non-tested sub-configuration volume with appropriate data
- Is available in final form through EPA's confirmation report
- Is the appropriate data level to capture vehicle volumes for an averaging calculation with ability to assign A/C credits
- Allows for the generation of CO₂-equivalent values for individual model-type fuel economies using simple factors, avoiding problems with non-tested and ADFE volumes.

Ford recommends the following regulatory language changes highlighted in red to the California Exhaust Emission Standards and Test Procedures, as well as title 13, section 1961.1 of the California Code of Regulations, to support the use of Federal CAFE data in the administration of the California GHG program.

1) Basic Calculation

Issue: Further clarification regarding the use of CAFE Program data is needed. Currently, the proposed language for Option B in subsection 2.5.2.1 states: "For a manufacturer that elects to demonstrate compliance with the greenhouse gas requirements using CAFE data, 'GHG vehicle test group' shall mean 'subconfiguration' in this subsection E.2.5.2.1.1."

Comment: Since the U.S. EPA Compliance and Innovative Strategies Division verifies all CAFE data (subconfiguration, configuration, base level and model type) submitted by the manufacturers, independently calculates the average fuel economy values to determine a manufacturers final model year CAFE and issues a Final Average Fuel Economy Calculation Report, Ford recommends that the language be revised to say "For a manufacturer that elects to demonstrate compliance with the greenhouse gas requirements using CAFE data, 'GHG vehicle test group' shall mean '**model type**' in this subsection E.2.5.2.1.1."

Issue: Additional language is required to allow the use of combined model type fuel economy in the calculations. The proposed language in subsection 2.5.2.1 states: "Greenhouse gas emissions used for the 'city' CO₂-equivalent value calculation shall be measured using the 'FTP' test cycle (40 CFR, Part 86, Subpart B), as modified in Part II of these test procedures. Greenhouse gas emissions used for the 'highway' CO₂-equivalent value calculation shall be based on emissions measured using the Highway Test Procedures."

Comment: Ford recommends that the regulation be revised to add the following language: "**Combined model type 'city' and 'highway' fuel economy converted to CO₂ may be used in the CO₂ equivalent calculations in lieu of separate model type 'city' and 'highway' CO₂-equivalent values. A distance weighted harmonic average (55%city/45%highway) shall be used to combine the city and highway values. The combined model type 'city' and 'highway' fuel economy calculation shall be based on the Option B formula below:**

Option A Formula:

CO₂-Equivalent Value = CO₂ + 296 x N₂O + 23 x CH₄ – A/C Direct Emissions Allowance – A/C Indirect Emissions Allowance

Option B Formula:

CO₂-Equivalent Value = (GHG Factor / Model Type FE) + 1.9 – A/C Direct Emissions Allowance – A/C Indirect Emissions Allowance

In the Option B Formula, the GHG Factor is given by the following table and Model Type FE is the fuel economy for the model type as calculated in the manufacturer's CO₂-equivalent calculation for California and the section 177 states."

Fuel	GHG Factor (g CO ₂ / gal)
Gasoline	8887
Other (Diesel, etc.)	Applicable factor

2) Greenhouse Gas Reporting Requirements

Issue: In Section H4.5 (a)(i), the proposed language states that a manufacturer choosing Option B "must submit a comprehensive list of all emission test results used to calculate its Corporate Average Fuel Economy, including the test vehicle description and identification number, for each subconfiguration and the number of vehicles produced and delivered for sale under Option 1 and 2 in section E.2.5.1.1, as applicable, that are represented by the subconfiguration."

Comment: Ford recommends that the language in Section H4.5 (a)(i) be revised to say "...must submit a comprehensive list of 'model type fuel economy' results used to calculate its Corporate Average Fuel Economy, including the model type description (carline, basic engine, and transmission class) for each 'model type' and the number of vehicles produced and delivered for sale under Option 1 and 2 in section E.2.5.1.1, as applicable, that are represented by the 'model type'. A manufacturer must not submit any model type fuel economy results, unless those results have been judged acceptable by the U.S. Environmental Protection Agency, in accordance with §600.007-08. A manufacturer that elects to use CAFE Program fuel economy data to demonstrate compliance with the greenhouse gas requirements must use all of the data that is used by the U.S. Environmental Protection Agency to determine a manufacturer's corporate average fuel economy for the applicable model year, and may forego testing of the "worst-case" configuration;"

Issue: In Section H4.5 (a)(v), the proposed language states, "for manufacturers demonstrating compliance under section E.2.5.1.1, Option 1, and E.2.5.2.1.1 Option B, final volume of California vehicles produced and delivered for sale for each subconfiguration;"

Comment: Ford recommends that the language in Section H4.5 (a)(v) be revised to say "...delivered for sale for each 'model type'"

Issue: In Section H4.5 (a)(vii), the proposed language states, "for manufacturers demonstrating compliance under section E.2.5.1.1, Option 2 and E.2.5.2.1.1 Option B, final combined and individual state volumes of vehicles produced and delivered for sale for each subconfiguration for California, the District of Columbia, and all states that have adopted California's greenhouse gas emission standards for that model year pursuant to section 177 of the federal Clean Air Act (42 U.S.C § 7507)."

Comment: Ford recommends that the language in Section H4.5 (a)(vii) be revised to say "..... delivered for sale for each 'model type' for California...."

Issue: In Section H4.5 (a)(vii), the proposed language states, "for manufacturers demonstrating compliance under section E.2.5.1.1, Option 2, and E.2.5.2.1.1 Option B, final combined and individual state sales volumes of vehicles produced and delivered for sale for each greenhouse gas vehicle test group subconfiguration for California, the District of Columbia, and all states that have adopted California's greenhouse gas emission standards for that model year pursuant to section 177 of the federal Clean Air Act (42 U.S.C. §7507)."

Comment: Ford recommends that the language in Section H4.5 (a)(vii) be revised to

say "For manufacturers demonstrating compliance under section E.2.5.1.1, Option 2, and E.2.5.2.1.1 Option B, final combined and individual state **total volumes of vehicles produced and delivered for sale in California, the District of Columbia, and all states that have adopted California's greenhouse gas emission standards for that model year pursuant to section 177 of the federal Clean Air Act (42 U.S.C. §7507).**".

As shown below, similar changes are recommended in the 1961.1 regulatory text.

Issue: In Section 1961.1 (a)(1)(B)(1)(a), Option B states: For a manufacturer that elects to demonstrate compliance with the greenhouse gas requirements using CAFE data, "GHG vehicle test group" shall mean "subconfiguration" in this subsection 1961.1(a)(1)(B)1.a.

Comment: Ford recommends that the language in Section 1961.1 (a)(1)(B)(1)(a) be revised to say "For a manufacturer that elects to demonstrate compliance with the greenhouse gas requirements using CAFE data, "GHG vehicle test group" shall mean "**model type**" in this subsection E.2.5.2.1.1....

Issue: Additional language is required to allow the use of combined model type fuel economy in the calculations. The proposed language in subsection 1961.1 (a)(1)(B)(1)(a) states: Greenhouse Gas emissions used for the "city" CO₂-equivalent value calculation shall be measured using the "FTP" test cycle (40 CFR, Part 86, Subpart B). Greenhouse Gas emissions used for the "highway" CO₂-equivalent value calculation shall be based on emissions measured using the Highway Test Procedures.

Comment: Ford recommends that the regulation be revised to add the following language: "**Combined model type 'city' and 'highway' fuel economy converted to CO₂ may be used in the CO₂ equivalent calculations in lieu of separate model type 'city' and 'highway' CO₂-equivalent values. A distance weighted harmonic average (55%city/45%highway) shall be used to combine the city and highway values. The combined model type 'city' and 'highway' fuel economy calculation shall be based on the Option B formula below:**

Option A Formula:

CO₂-Equivalent Value = CO₂ + 296 x N₂O + 23 x CH₄ – A/C Direct Emissions Allowance – A/C Indirect Emissions Allowance

Option B Formula:

CO₂-Equivalent Value = (GHG Factor / Model Type FE) + 1.9 – A/C Direct Emissions Allowance – A/C Indirect Emissions Allowance

In the Option B Formula, the GHG Factor is given by the following table and Model Type FE is the fuel economy for the model type as calculated in the manufacturer's CO₂-equivalent calculation for California and the section 177 states."

Fuel	GHG Factor (g CO ₂ / gal)
Gasoline	8887
Other (Diesel, etc.)	Applicable factor

In summary, Ford believes that it is important that all stakeholders are aligned as we prepare to demonstrate compliance with the New Passenger Motor Vehicle Greenhouse Gas Emissions Standards. Ford would like to reiterate that the CAFE data is subject to the same confirmation process as the certification data and the model type fuel economy values that we recommend CARB reference in its regulation. The CAFE data are independently calculated by the U.S. EPA each model year and could be submitted electronically and in "one" standardized format for all manufacturers. Ford believes it is very important that language changes along the lines suggested above be made to the proposed regulations to further clarify the use of Federal CAFE data. Such changes would be fully consistent with the general understanding that the California GHG rules will use federal CAFE data to the maximum extent possible, and would also eliminate significant and unnecessary burdens on vehicle manufacturers. These recommendations are made in the spirit of helping CARB promulgate a set of GHG regulations that are as clear and efficient as possible.